

**SUMMARY OF PACIFIC SALMON CODED-WIRE TAG APPLICATION
AND RECOVERY, PRINCE WILLIAM , 1995**



by

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PREFACE

This report was prepared as part of cooperative agreements between the Alaska Department of Fish and Game, the Prince William Sound Aquaculture Association, and the Valdez Fisheries Development Association for State Fiscal Year 1996.

AUTHOR

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INTRODUCTION

Primary reporting duties for the Prince William Sound Pink Salmon Coded-Wire Tag Project have been associated with generation of technical reports for the Exxon Valdez Oil Spill Trustee Council. While these reports provide much technical information, they do not evaluate day-to-day project operations and may not present all information desired by cooperating private non-profit aquaculture associations, Prince William Sound Aquaculture Corporation (PWSAC) and Valdez Fishery Development Association (VFDA). In order to better address the information needs of the aquaculture associations, the Alaska Department of Fish and Game (ADF&G) agreed to write a separate annual report which summarized tagging and tag recovery activities, presented estimates of hatchery contributions by fishing period rather than week, and provided survival rates of pink salmon by tag code.

Management of the pink salmon harvests in Prince William Sound (PWS) has become more complex with the increased hatchery production of adults. Harvesting the surplus hatchery production without over harvesting the wild stock component is the responsibility of the area management biologist. This harvest must occur while the quality of the fish is still very good which requires commercial harvests throughout the run. The coded wire tag (CWT) program was started so inseason management decisions could be made based on the CWT recoveries from the test and commercial common property fisheries. The results of the tag recoveries are crucial in separating the hatchery and wild components in a mixed stock fishery allowing the managers to make informed decisions on fishing periods and times. The CWT recoveries were also used to apportion the cost recovery catch to PWSAC since their harvest and broodstock is based on 40% of the total hatchery contribution to the commercial fishery.

The CWT program consists of two components, tag application and tag recovery. The tag application in pink salmon occurs in the year prior to the tag recovery as they are all two year old fish. The tags are applied to emergent fry at a predetermined ratio and checked for retention prior to their release. The tags applied in 1995 will be recovered in 1996.

METHODS

Applying Tags

Four hatcheries produce pink salmon in PWS. Tagging procedures are similar at all hatcheries and are described in detail in the 1994 Coded Wire Tag Project Report to the Exxon Valdez Oil Spill Trustee Council (Restoration Project 94320B). Fry to be tagged are randomly selected from their release group, marked, and released with their cohorts. Usually, about one pink salmon fry in every 600 is tagged. A total of 1,146,736 fry were tagged in 1995 at the PWS hatcheries of which 1,017,782 were released with valid tags. The difference in these two numbers can be attributed to mortality and loss of tag prior to release.

Recovering Tags

Tags are recovered inseason from pink salmon harvested during common property and cost-recovery fisheries after each fishery opening. As pink salmon are pumped from tenders onto conveyer belts in processing plants, ADF&G technicians count every salmon examined and remove the head from every salmon with a missing adipose fin. An attempt was made to sample about 20 percent of the total harvest in this manner to ensure that a sufficient number of tags are collected to produce accurate and precise estimates of hatchery contributions.

Tags are recovered daily from hatchery broodstocks during the egg take procedure at each facility. All of the pink salmon utilized by the hatchery for egg production, egg sales or surplus are examined for tags. These fish are counted and the head is removed from any fish with a missing adipose fin.

One tagged pink salmon was recovered at a weir not located at a hatchery. The expanded number of adults this tag represented was said to contribute to the escapement of that system. Straying was suspected to have occurred in other systems, but the lack of a recovery effort did not allow for any other stream recoveries.

All of the sampled heads were sent to the CWT laboratory in Juneau, Alaska where the tag was removed and the code read and recorded

Estimating Hatchery Contributions

For this report, common property and cost-recovery fishery samples were stratified by district, period, and processor. Since the RBase computer program normally used in calculating hatchery contributions could not readily be altered from the original stratification of district, week, and processor, hatchery contribution estimates for this report were calculated on Lotus spreadsheets developed by Samuel Sharr, the former Principal Investigator for this program. Equations used for calculations are presented in the following paragraphs.

The contribution of release group t to the sampled common property and cost-recovery harvests, escapements and broodstocks \hat{C}_t , was estimated as:

$$\hat{C}_t = \sum_{i=1}^L x_{it} \left(\frac{N_i \hat{a}}{s_i p_t} \right), \quad (1)$$

where

x_{it}	=	number of group t tags recovered in the i th stratum,
N_i	=	total number of fish in the i th stratum,
s_i	=	number of fish sampled from the i th stratum,
p_t	=	proportion of group t tagged,
a	=	historical adjustment factor associated with W. H. Noerenberg facility (1989 through 1995); and,
L	=	number of recovery strata associated with common property, cost-recovery, brood stock, and special harvests in which tag code t was found.

The Wally H. Noerenberg (WHN) adjustment factor, for a given year is estimated as the ratio of sampled fish in the brood stock to the expanded number of fish based on tags found in the sample and is expressed as:

$$\hat{a} = \frac{s}{\sum_i \frac{x_i}{p_i}}, \quad (2)$$

where

T	=	number of tag codes released from the Wally H. Noerenberg hatchery in previous year.
p_i	=	tagging rate at release for the i th tag code (defined as number of tagged fish released with the i th code divided by the total number of fish in release group i),
x_i	=	number of tags of the i th code found in s and,
s	=	number of brood stock fish examined in the W. H. Noerenberg broodstock.

The purpose of an adjustment factor is to remedy violations of the assumptions that 1) mortality of tagged and untagged pink salmon within a release group is the same and 2) marked pink salmon do not lose tags. The adjustment factor may help alleviate problems of straying of tagged fish in broodstock contributions. The adjustment factor used in 1995 was calculated as the mean of all WHN hatchery adjustment factors for the period 1989-1995. An adjustment factor based only on data from WHN hatchery was used for all hatcheries since we believe this is the only facility at which significant numbers of pink salmon from either wild runs or other hatcheries do not occur in the brood ponds. Pink salmon straying from other hatcheries or wild runs will inflate the adjustment factor

An additional adjustment factor was developed when it became evident that a very high percentage of adipose clipped fish caught in the Northern District did not contain tags. It is unclear whether the fish lost the tag during their ocean migration or whether the tag was even applied. In 1994, the Cannery Creek hatchery had some difficulty with interference from single-side band radios causing false positives in the quality control device (QCD). The actual tag retention is also suspect since the QCD indicated false positives during quality control checks for tag retention at the end of each day. The same problems occurred in 1995 with the QCD and no reasonable solution has been found to correct it.

In order to adjust for the apparent excessive tag loss, a portion of the sampled fish which were clipped (marked), but did not contain tags were classified as a separate tagging group. Marked fish with no tags have always been present in samples, and are dealt with via the WHN historical adjustment factor. Thus, in the event of excessive tag loss, only a fraction of the marked fish with no tags could be allocated to a separate tagging group. The proportion of marked fish with tags, \hat{E} , was estimated in the following manner:

$$\hat{E} = \frac{\sum_{i=1}^l y_i}{\sum_{i=1}^l z_i}, \quad (3)$$

where

- y_i = the number of tags found in the i th stratum
- z_i = number of heads collected in the i th stratum (minus heads lost and tags misplaced at tag lab), and,
- l = number of recovery strata containing appropriate samples (see following paragraph).

The strata used to estimate \hat{E} were confined to fisheries and districts which did not exhibit substantial hatchery contributions from Cannery Creek. The Southwestern district cost recovery fishery and AFK rack return, as well as Coghill district common property and cost recovery fisheries, and WHN rack return were included in the calculations. Eastern district fisheries and rack return were excluded from the calculations due to tagging problems during 1994. The exclusion of Eastern district strata resulted in a lower estimated \hat{E} , meaning that fewer clips without tags would be used in the hatchery contribution estimate, as compared to using an \hat{E} which included Eastern district strata.

\hat{E} is the estimated average rate of tag retention, or one minus the average rate of tag loss. \hat{E} was multiplied by the number of heads in a sample, to produce the expected number of tags for that sample. If the actual number of tags found was greater than or equal to the expected number of tags, zero heads in the sample were assigned to the special tag code. If the actual number of tags was less than the expected number of tags, the difference between the expected number and the actual number was assigned to the special tag code, 1399999999. The tag expansion factor given to 1399999999 was 599.72, the average of tag expansions for all tag codes used at Cannery Creek in 1994. The contribution rates for this imitation tag code were calculated in a manner similar to that used for all other tag codes. Since poor tag retention was primarily a problem in fish originating from Cannery Creek, only samples from fisheries and districts exhibiting substantial contributions from that hatchery were modified in this manner. The Southwestern district common property fishery, and Northern district common property and cost recovery fisheries, as well as Cannery Creek broodstock received the extra adjustment.

The contribution of release group t to unsampled strata, Cu_t , was estimated from contribution

rates associated with strata which were sampled from the same district-week openings as the unsampled strata and is expressed as:

$$\hat{C}u_t = \sum_{i=1}^U \left[N_i * \left(\frac{\sum_{j=1}^S \hat{C}_{tj}}{\sum_{j=1}^S N_j} \right) \right], \quad (3)$$

where

- U = number of unsampled strata,
- N_i = number of fish in i th unsampled stratum
- S = number of strata sampled in the period in which the unsampled stratum resides,
- C_{tj} = contribution of release coded with tag t to the sampled stratum j , and
- N_j = number of fish in j th sampled stratum.

A variance approximation for C_t , derived by Clark and Bernard (1987) and simplified by Geiger (1990) was used:

$$\hat{V}(\hat{C}_t) = \sum_{i=1}^L x_{it} \left[\frac{N_i \hat{a}}{s_i p_t} \right] \left[\frac{N_i \hat{a}}{s_i p_t} - 1 \right]. \quad (4)$$

Summation of variance components over all tag codes provided an estimate of the variance of the total hatchery contribution.

Estimating Survival Rates

The survival rate of the release group coded with tag t (S_t), was estimated as:

$$\hat{S}_t = \frac{\hat{C}_t + \hat{C}u_t}{R_t}, \quad (5)$$

where

C_t = contribution of release group coded with tag t to sampled strata,
 Cu_t = contribution of release group coded with tag t to unsampled strata,
 R_t = total number of fish in release group coded with tag t released from hatchery.

Assuming the total release of pink salmon associated with a tag code is known with negligible error, and that the cumulative variance contributions associated with the unsampled strata are small, a suitable variance estimate for S_t is given by:

$$\hat{V}(\hat{S}_t) = \frac{\sum_{i=1}^L x_{it} \left[\frac{N_i \hat{a}}{s_i p_t} \right] \left[\frac{N_i \hat{a}}{s_i p_t} - 1 \right]}{R_t^2} \quad (6)$$

RESULTS AND DISCUSSION

I was not present in PWS during the 1995 tagging operation, but am very familiar with the process. Therefore, I obtained some information for this report from interviews with ADF&G staff working in PWS during this time.

Applying Tags In 1995

A. F. Koernig Hatchery

Rates of emergence and migration of 1995 pink salmon fry were normal. This normal rate allowed the inexperienced tagging crew to keep up with the emergence. This year, all treatment groups were tagged at a ratio of approximately 1:600 as opposed to last year when two experimental groups (Max Growth) were tagged at 1:200 (Table 1). Two tag codes, 13010301012 and 1301030208 were from wire not used in the previous year and apparently caused some problems in tag placement and detection in the tagging machines. The remaining codes were applied from new wire provided by a new supplier and did not cause any difficulties. The problems associated with codes 012 and 208 may or may not affect the retention rates found in the returning adults in 1996. These two tag codes also did not cut as cleanly and may cause

some problem in decoding, but according to a Northwest Marine Technology representative an experienced tag reader should still be able to decode the tags. Finally, the release group tagged with code 1301030707 were prematurely dumped into the general population pen, resulting in a tag rate of 1:593.

Differential tagging rates can present problems in calculating inseason estimates of hatchery contributions, when estimation is based solely on detected tags. A release group with a tagging rate 1:593 can cause an overestimate of hatchery contribution. However, tagging at this rate probably does not deviate enough from 1:600 to be of much concern unless survival rates differ greatly among release groups.

The estimation of inseason hatchery contributions in 1994 provides a good example of the problems that can be encountered when tagging rates differ between release groups. In 1994, a treatment group was tagged at 1:200 and returns from this release initially caused a large overestimate of the hatchery contribution in 1995. The problem was exacerbated by the fact that the group had a mean survival rate 19 times that of the mean survival of the other groups released from this hatchery. The overestimation based on detected tags was compensated for by taking the average percentage of decoded tags from the 1:200 release group compared to the other released tag codes and adjusting the tag to untagged ratio down from 1:600. The main difficulty proved to be the time delay required to get information on decoded tags as the recovered salmon heads had to be shipped to Juneau for processing. Most of the inseason management decisions are based on information pertaining to detected tags instead of decoded tags as that information is available within two days. It is interesting to note that the adult return from the experimental release accounted for almost 63% of the return to this hatchery while the release was only 7.6% of the total (Table 1 and 4).

A 1:200 tagging rate was set to increase the power of statistical tests to be used for a pink salmon fry marine growth study being conducted as part of the Exxon Valdez damage assessment and restoration program. Unfortunately, the ADF&G biologist in charge of the coded-wire tag recovery program was not informed of this change from the 1:600 tagging rate until these fry had already been released. To avoid these types of problems in the future, both the tag application and recovery portions of this program have been placed under the direction of one ADF&G biologist.

While differential tagging rates can bias results of inseason estimates based on detected tags, it will not bias results of inseason estimates based on decoded tags. ADF&G made inseason estimates of hatchery contributions from decoded tags for the first two fishery openings in the Southwestern District and on several other occasions throughout the season. These samples were processed by the ADF&G Tag Laboratory in Juneau on a priority basis, so that information on decoded tags would be available within 48 hours from the time the samples were received by the Laboratory. Inseason hatchery contribution estimates based on decoded tags were available about five to seven days after each opening. The decoded tags alerted us to the problems with the

survival rates of the experimental groups tagged at the non-standard 1:200 and allowed us to make corrections to estimates based on detected tags.

W. H. Noerenberg Hatchery

This facility produces pink, chum, coho, and chinook salmon (Tables 2 and 3). The emphasis of this report is on pink salmon since funding for 1995 from the Trustee Council was only for that species. The discussion is therefore restricted to pink salmon. In 1995, only one tagging machine malfunctioned at this hatchery because of a bent needle clamp carrier arm. The other three machines functioned normally. All pen loadings and tag ratios were accomplished without major difficulties.

In 1994, one tag code had to be voided when some of the tagged pink salmon fry were placed in the wrong pen, and two tag codes were applied to pink salmon fry at a rate of 1:200 (Table 1). Both of these circumstances caused an overestimate of this hatchery's adult return in 1995, the 1:200 tag codes being the main source of error. The voided tag code caused some problems as it was the third most abundant tag code. Approximately 7,000 fish containing the tag code that was voided were accidentally dumped into the experimental pens in which the fry were to be reared to a large size and released in mid-June. Survival rates for the valid tag codes released from the experimental pens were extremely high averaging over 22% while all of the valid codes released from standard production pens averaged less than 1% (Table 4).

Cannery Creek Hatchery

The tagging rate in 1995 for all release groups was very close to 1:600 (Table 2). Some mechanical problems were encountered with tagging machines which had to do mostly with the quality of the wire used to form the tags. As in 1994, the QCD used at this hatchery exhibited a tendency to yield false positives. Since these errors were assumed to be the result of radio interference, efforts were made to do retention tests in the evenings when radio traffic was less. This strategy provided some minor improvement in the testing procedure, but the tagging operation was still handicapped by erratic false positive indications. The failure of the QCD to function properly during the tagging operation can cause problems during tag recovery. Often the tagging personnel check their tag placement from the number of rejects (i.e. the number of fry determined by the QCD not to have received a tag) and adjust their fish hold or the needle to correct poor placement. If the QCD malfunctions, the taggers tend to ignore it and do not then know whether their tagging is effective until a later manual quality control check. By the time this check occurs several thousand fish may have been poorly tagged, causing a higher than normal tag loss rate in the returning adult fish. The percentage of fish returning to this hatchery in 1995

that were clipped, but contained no tag was quite high averaging 56%. After the problem was discovered, an additional adjustment was applied to calculate this hatchery's contribution.

Solomon Gulch Hatchery

Estimates of the number of pink salmon fry in each release group were obtained at this facility by calculating the mortality throughout the incubation and emergence period and subtracting that number from the estimated loaded number of eggs. This method of calculation is probably not as accurate as using electronic fry counters and must be viewed as an approximate number probably within 10% of the actual number. In 1995 strong winds and cold weather delayed loading outmigrating fry into the net pen rearing complex. This delay caused many incubators to overflow with several hundred thousand escapees being washed down into a concrete raceway where they were reared for a short while. Fish tagged with code 1301030602 had a very high mortality related to the holding structure and extremely bad weather. Additional fish were tagged to make up for the mortality using some of the escapees being held in the concrete raceway. The additional tagged fish were smaller than those untagged cohorts in the rearing complex which could cause some bias in the returning adult survivals and hatchery contribution rate. Problems also exist with release groups tagged with codes 1301030608 and 1301030603. The fry were tagged and held in freshwater for 15 days before being transferred to a sea water pen. The fry were emaciated and in poor condition when finally transferred to sea water. Their health improved quickly after being started on food, but again the non-standard treatment could introduce a bias into the returning adult hatchery contribution rate. As mentioned in the WHN hatchery section, this report's emphasis is limited to the pink salmon tagging operation and does not deal with other species even though coho and chum salmon were also tagged at this hatchery (Table 3).

Hatchery Contributions To 1995 Harvest

Hatchery contributions of pink salmon to the common property fisheries within each district were estimated for each period of the 1995 fishing season (Table 5). Hatchery contributions of pink salmon to the cost recovery fisheries within each district were estimated by date for the 1995 season (Table 6). Hatchery contributions of pink salmon to the test fisheries in the S.W. district were estimated by date for the 1995 season (Table 7). Hatchery contributions of pink salmon to the broodstock for each hatchery were estimated by date for the 1995 season also (Table 8). Hatchery contribution estimates by period or date are similar to those calculated by statistical week. Some disparities may be found, however, due to the different way in which data were stratified (period versus statistical week), and the use of small sample sizes to partition some period catches.

Adjustments for Excessive Tag Loss

The average rate of tag retention, \hat{E} , was estimated as 0.79. As with the WHN historical adjustment factor, we don't have enough data to gauge how closely the estimate reflects reality. In addition, samplers use subjective judgments regarding the identification of a bona fide clip. In the past, overzealous sampling was not a problem, since marked fish with no tags were excluded from the estimates. Hatchery contributions which include clipped fish with no tags can overestimate hatchery contributions, since overzealous samplers will collect heads that should not be included in the sample. A variance estimate was not calculated for \hat{E} . Since tag loss is also dealt with in the WHN adjustment factor, \hat{E} and the WHN adjustment factor are not independent, and some work is required to ascertain an appropriate expression for the estimation of the variance of contributions in which \hat{E} plays a role.

Common Property Harvest

The 1995 pink salmon return to PWS of 18.4 million ranks 10th out of the last 19 years. The total harvest in PWS was 16.0 million pink salmon. The common property pink harvest was 10.8 million, 5.1 million were taken during cost recovery fisheries and 0.14 were taken during a test fishery. In addition, 1.1 million were taken as broodstock. Returns to Solomon Gulch hatchery were strong for a second year in a row with a total return of 6.7 million fish. Cannery Creek hatchery had the next highest return at 5.0 million followed by W. H. Noerenberg with 2.3 million and A.F. Koernig with 0.8 million adults (Table 9). Wild stock runs were generally strong on the east side of PWS and weak on the west side.

In 1995, pink salmon produced by Cannery Creek Hatchery comprised the largest portion of the common property harvest including the test fishery (Table 9). The remaining harvest was produced, in order of abundance, by Solomon Gulch Hatchery, wild stocks, WHN hatchery, and AFK hatchery. In general, the largest contributor to a district was the nearest hatchery producing pink salmon. The exception was Southwestern district, where the WHN and Cannery Creek hatcheries, as well as wild stocks, contributed more to the district catches than did the AFK hatchery.

The PWSAC's contribution to the common property and test fishery amounted to 5.35 million pink salmon. The total number of pink salmon caught in the cost-recovery harvest by PWSAC amounted to 2.55 million and the total number taken for broodstock at PWSAC hatcheries was 0.7 million. The corporation's share is thus 3.25 million pink salmon. The post season analysis

indicates that the PWSAC cost recovery and broodstock amounted to 37.8% of the corporation's contribution to the common property fishery (Corporation share/(Common Property contribution + Corporation share)).

Cost Recovery Harvest

Cost recovery harvests were stratified into daily segments (Table 6). Daily harvests were not sampled in all cases, so a number of daily strata had to be combined. In general, contributions to cost recovery harvests from hatcheries other than the one of origin were small. Main Bay Hatchery was an notable exception. Since Main Bay hatchery produces only sockeye salmon, the 43,401 pink salmon sold in their cost recovery operation were of an origin other than that hatchery. Since these pinks were not sampled for CWT's the actual contribution rate is unknown and have been assigned as wild stock.² Solomon Gulch Hatchery's cost recovered pink salmon was the highest at 2,535,578 adults as indicated on State of Alaska fish ticket sales harvest reports. The remaining hatchery cost recoveries of pink salmon from fish ticket sales are in the following order of abundance: Cannery Creek, 1,036,611; WHN, 928,938; AFK, 545,624 and Main Bay, 43,401.

Survival Rates by Tag Code

The experimental release groups which were released in June of 1994 at over 1 gram survived at unprecedented levels. Those released from the WHN hatchery averaged 22.3% while those released from the AFK hatchery at approximately the same size survived at a respectable 6.87%. These survivals are all the more impressive when considering the mean survival rate for all other release groups was 0.35% at the AFK hatchery and 0.42% at the WHN hatchery (Table 4). If it were not for the experimental release of 1.5 gram fish at the WHN hatchery, the return to that hatchery would have been reduced by nearly 1.8 million adults.

It is interesting to speculate on the reasons for the vastly improved survival of the larger pink salmon fry. These fish being released in June could have bypassed a large predator population either because of the lateness of release or their size allowed them to avoid them. It could be that sea water temperatures and plankton abundance was more conducive for survival at that time and those conditions may not be presented each year. The economic potential of returns based on the

²The common property fishery in the Eshamy district prior to the Cost Recovery fishery contained approximately 33% hatchery produced pink salmon. Because of the small size of the pink salmon catch and an unknown, but probably even smaller hatchery contribution to that catch the entire amount was attributed to wild stock.

magnitude of these high survival rates certainly warrants further study. No other trends could be found in any of the other release groups from either the AFK or WHN hatcheries (Table 4).

An apparent trend in survival rates for Cannery Creek pink salmon indicated all of the early release groups had significantly lower survival rates than the mid and late fed release groups (Table 4). However, because of the high tag loss rate in the Cannery Creek fish this data should be viewed as suspect. It is unknown at this time whether the tag loss occurred evenly throughout all tag codes or if some codes lost tags at higher rates. It is possible that the fish tagged early in the season lost their tags at a higher rate than fish tagged later in the season.

Consistent with recent years, pink salmon survival rates tended to be higher in the eastern portion of PWS. The survival rate associated with the Cannery Creek hatchery was the highest overall at 5.97%; that associated with the Solomon Gulch hatchery was slightly lower at 4.49%, while survival rates of fish released from the WHN and AFK hatcheries were the lowest at 1.39% and 0.88%, respectively. Environmental factors which could have caused this trend include, but are not limited to, water circulation patterns, food availability, presence of predators, and lingering affects of the 1989 oil spill.

CONCLUSIONS

- 1) Hatchery production of pink salmon in PWS, was average for 1995 with good returns at the Solomon Gulch and Cannery Creek hatcheries and poor returns at the W. H. Noerenberg and A. F. Koernig hatcheries.
- 2) Reasons for low survival rates of pink salmon released from the A. F. Koernig facility are not known at this time, but the trend of poor survivals appears to be continuing for this facility.
- 3) Differential tagging rates of experimental groups in 1994 presented problems for inseason estimation of hatchery contributions in 1995 harvests. This problem has been corrected for the 1996 return year.
- 4) Poor tag retention at the Cannery Creek hatchery caused very serious problems in estimating hatchery contributions to the catch in the 1995 fishery. Every effort should be made to resolve this problem.
- 5) The release of large pink fry later in the season produced exceptional survival rates at both the A. F. Koernig and W. H. Noerenberg hatcheries. Additional study of this release strategy is warranted.

TABLE 1
1994 PINK RELEASES BY TAG CODE

1994 Release Data from Trib95														
SPEC\$	HAT\$	RELYR	BDYR	RELSITE		STOCK	TAGC	BEGREL	ENDREL	RELWEIT	EXPERIMENT	TAGGED	RELEASE	TAGXDIS
PINK	A F KOERNIG	1994	93	SAWMILL	BAY 226-40	A F KOERNIG	1301030108	4/26/94	4/26/94	0.27	TIME OF RELEASE	13427	6618697	492.939
PINK	A F KOERNIG	1994	93	SAWMILL	BAY 226-40	A F KOERNIG	1301030109	4/29/94	4/29/94	0.26	TIME OF RELEASE	10541	6324498	599.99
PINK	A F KOERNIG	1994	93	SAWMILL	BAY 226-40	A F KOERNIG	1301030110	4/30/94	4/30/94	0.26	TIME OF RELEASE	9213	5527509	599.968
PINK	A F KOERNIG	1994	93	SAWMILL	BAY 226-40	A F KOERNIG	1301030111	4/30/94	4/30/94	0.24	TIME OF RELEASE	9741	5844629	600.002
PINK	A F KOERNIG	1994	93	SAWMILL	BAY 226-40	A F KOERNIG	1301030113	5/2/94	5/2/94	0.23	TIME OF RELEASE	9179	5507274	599.986
PINK	A F KOERNIG	1994	93	SAWMILL	BAY 226-40	A F KOERNIG	1301030114	5/3/94	5/3/94	0.22	TIME OF RELEASE	10208	6125031	600.022
PINK	A F KOERNIG	1994	93	SAWMILL	BAY 226-40	A F KOERNIG	1301030115	5/4/94	5/4/94	0.21	TIME OF RELEASE	8570	5142018	600.002
PINK	A F KOERNIG	1994	93	SAWMILL	BAY 226-40	A F KOERNIG	1301030201	5/5/94	5/5/94	0.21	TIME OF RELEASE	8243	4946477	600.082
PINK	A F KOERNIG	1994	93	SAWMILL	BAY 226-40	A F KOERNIG	1301030202	5/6/94	5/6/94	0.22	TIME OF RELEASE	10577	6345996	599.98
PINK	A F KOERNIG	1994	93	SAWMILL	BAY 226-40	A F KOERNIG	1301030203	5/6/94	5/6/94	0.23	TIME OF RELEASE	10794	6476718	600.029
PINK	A F KOERNIG	1994	93	SAWMILL	BAY 226-40	A F KOERNIG	1301030204	5/9/94	5/9/94	0.23	TIME OF RELEASE	11143	6685569	599.979
PINK	A F KOERNIG	1994	93	SAWMILL	BAY 226-40	A F KOERNIG	1301030205	5/10/94	5/10/94	0.22	TIME OF RELEASE	10450	6270226	600.021
PINK	A F KOERNIG	1994	93	SAWMILL	BAY 226-40	A F KOERNIG	1301030206	5/11/94	5/11/94	0.24	TIME OF RELEASE	11368	6821127	600.028
PINK	A F KOERNIG	1994	93	SAWMILL	BAY 226-40	A F KOERNIG	1301030207	5/17/94	5/17/94	0.22	TIME OF RELEASE	10191	6398894	627.896
PINK	A F KOERNIG	1994	93	SAWMILL	BAY 226-40	A F KOERNIG	1301030303	6/13/94	6/13/94	1.09	SIZE OF RELEASE	17732	3547896	200.084
PINK	A F KOERNIG	1994	93	SAWMILL	BAY 226-40	A F KOERNIG	1301030304	6/13/94	6/13/94	1.03	SIZE OF RELEASE	17481	3496392	200.01
PINK	CANNERY CREEK	1994	93	CANNER	CR 222-50	CANNERY CR	1301021513	5/1/94	5/1/94	0.29	TIME OF RELEASE	16084	9485711	589.76
PINK	CANNERY CREEK	1994	93	CANNER	CR 222-50	CANNERY CR	1301021514	5/5/94	5/5/94	0.24	TIME OF RELEASE	15523	9329671	601.022
PINK	CANNERY CREEK	1994	93	CANNER	CR 222-50	CANNERY CR	1301021515	5/10/94	5/10/94	0.25	TIME OF RELEASE	15793	9492115	601.033
PINK	CANNERY CREEK	1994	93	CANNER	CR 222-50	CANNERY CR	1301030101	5/18/94	5/18/94	0.26	TIME OF RELEASE	15691	9429516	600.95
PINK	CANNERY CREEK	1994	93	CANNER	CR 222-50	CANNERY CR	1301030102	5/18/94	5/18/94	0.25	TIME OF RELEASE	15797	9494035	601.002
PINK	CANNERY CREEK	1994	93	CANNER	CR 222-50	CANNERY CR	1301030103	5/23/94	5/23/94	0.25	TIME OF RELEASE	16252	9767701	601.015
PINK	CANNERY CREEK	1994	93	CANNER	CR 222-50	CANNERY CR	1301030104	6/1/94	6/1/94	0.3	TIME OF RELEASE	16434	9876333	600.969
PINK	CANNERY CREEK	1994	93	CANNER	CR 222-50	CANNERY CR	1301030105	6/1/94	6/1/94	0.26	TIME OF RELEASE	15961	9580712	600.257
PINK	CANNERY CREEK	1994	93	CANNER	CR 222-50	CANNERY CR	1301030106	6/1/94	6/1/94	0.24	TIME OF RELEASE	13569	8160820	601.431
PINK	SOLOMON GULCH	1994	93	SOLOMO	GULCH 221	SOLOMON G	1301030209	4/26/94	4/26/94	0.44		49718	28140000	565.992
PINK	SOLOMON GULCH	1994	93	SOLOMO	GULCH 221	SOLOMON G	1301030210	4/26/94	4/26/94	0.41		49513	29370000	593.177
PINK	SOLOMON GULCH	1994	93	SOLOMO	GULCH 221	SOLOMON G	1301030211	4/26/94	4/26/94	0.45		50381	24170000	479.744
PINK	SOLOMON GULCH	1994	93	SOLOMO	GULCH 221	SOLOMON G	1301030212	5/9/94	5/9/94	0.65		53421	23740000	444.394
PINK	SOLOMON GULCH	1994	93	SOLOMO	GULCH 221	SOLOMON G	1301030213	5/9/94	5/9/94	0.64	TIME OF RELEASE	68860	29553648	429.184
PINK	SOLOMON GULCH	1994	93	SOLOMO	GULCH 221	SOLOMON G	1301030214	5/9/94	5/9/94	0.62	TIME OF RELEASE	33785	14500000	429.184
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301020401	5/11/94	5/11/94	0.35	TIME OF RELEASE	15977	9371637	586.57
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301021214	4/28/94	4/28/94	0.23	TIME OF RELEASE	2229	1300230	583.324
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301021312	4/25/94	4/25/94	0.38	TIME OF RELEASE	18674	11211336	600.371
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301021313	4/25/94	4/25/94	0.41	TIME OF RELEASE	19208	11540914	600.838
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301021314	4/28/94	4/28/94	0.39	TIME OF RELEASE	19917	12040148	604.516
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301021315	4/28/94	4/28/94	0.39	TIME OF RELEASE	19744	11872060	601.299
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301021401	5/3/94	5/3/94	0.41	TIME OF RELEASE	20181	12163694	602.729
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301021402	5/3/94	6/11/94			19977	19997	1.001
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301021403	5/3/94	5/3/94	0.39	TIME OF RELEASE	20324	12055003	593.141
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301021404	5/5/94	5/5/94	0.4	TIME OF RELEASE	20706	12328148	595.39
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301021405	5/5/94	5/5/94	0.4	TIME OF RELEASE	20214	12126815	599.921
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301021406	5/7/94	5/7/94	0.38	TIME OF RELEASE	20098	12106415	602.369
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301021407	5/7/94	5/7/94	0.38	TIME OF RELEASE	20113	12214122	607.274
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301021408	5/9/94	5/9/94	0.35	TIME OF RELEASE	20385	12336261	605.163
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301021409	5/9/94	5/9/94	0.36	TIME OF RELEASE	19965	12010977	601.601
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301030305	6/11/94	6/11/94	1.46	SIZE OF RELEASE	18990	3803426	200.285
PINK	WALLY NOERENBER	1994	93	LAKE BA	Y 223-40	WALLY NOER	1301030306	6/11/94	6/11/94	1.38	SIZE OF RELEASE	19469	3905582	200.605
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TABLE 2
1995 PINK SALMON RELEASES BY TAG CODE

SPEC\$	HAT\$	RELYR	BDYR	RELSITE	TAGC	BEGREL	ENDREL	RELWEIT	EXPE	RMN	T	TAGGED	RELEASES	TAGXDIS
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030112	5/4/95	5/4/95	0.22	TIME	OF	RELEASES	10805	6482867 599 987
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030208	6/14/95	6/14/95	0.68	TIME	OF	RELEASES	5484	3290381 599 996
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030611	6/15/95	6/15/95	1.35	TIME	OF	RELEASES	4949	2961191 598 341
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030612	6/15/95	6/15/95	1.34	TIME	OF	RELEASES	5056	3024130 598 126
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030613	4/25/95	4/25/95	0.3	TIME	OF	RELEASES	12844	7706875 600 036
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030614	4/28/95	4/28/95	0.26	TIME	OF	RELEASES	13227	7935957 599 981
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030815	5/1/95	5/1/95	0.27	TIME	OF	RELEASES	13150	7890002 600
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030701	5/2/95	5/2/95	0.24	TIME	OF	RELEASES	13267	7959680 599 959
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030702	5/3/95	5/3/95	0.27	TIME	OF	RELEASES	11523	6914076 600 023
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030703	5/4/95	5/4/95	0.26	TIME	OF	RELEASES	11489	6893169 599 979
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030704	5/5/95	5/5/95	0.25	TIME	OF	RELEASES	11568	6940882 600 007
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030705	5/6/95	5/6/95	0.21	TIME	OF	RELEASES	11971	7182752 600 012
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030706	5/8/95	5/8/95	0.22	TIME	OF	RELEASES	11497	6898064 599 988
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030707	5/8/95	5/8/95	0.23	TIME	OF	RELEASES	11598	6884286 593 675
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030708	5/10/95	5/10/95	0.23	TIME	OF	RELEASES	10712	6427763 600 052
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030709	5/11/95	5/11/95	0.22	TIME	OF	RELEASES	10362	6217053 599 985
PINK	A F KOERNIG	1995	94	SAWMILL	BAY 226-40	1301030710	5/2/95	5/2/95	0.22	TIME	OF	RELEASES	11624	6974024 599 967
PINK	CANNERY CREEK	1995	94	CANNERY	CR 222-50	1301030903	4/29/95	4/29/95	0.27	TIME	OF	RELEASES	15972	9557693 598 403
PINK	CANNERY CREEK	1995	94	CANNERY	CR 222-50	1301030904	5/1/95	5/1/95	0.24	TIME	OF	RELEASES	16382	9791611 597 705
PINK	CANNERY CREEK	1995	94	CANNERY	CR 222-50	1301030905	5/3/95	5/3/95	0.24	TIME	OF	RELEASES	16244	9699256 597 097
PINK	CANNERY CREEK	1995	94	CANNERY	CR 222-50	1301030906	5/6/95	5/6/95	0.24	TIME	OF	RELEASES	16740	1E+07 599 082
PINK	CANNERY CREEK	1995	94	CANNERY	CR 222-50	1301030907	5/9/95	5/9/95	0.26	TIME	OF	RELEASES	16366	9833723 600 862
PINK	CANNERY CREEK	1995	94	CANNERY	CR 222-50	1301030908	5/15/95	5/15/95	0.27	TIME	OF	RELEASES	16661	9865363 592 123
PINK	CANNERY CREEK	1995	94	CANNERY	CR 222-50	1301030909	5/22/95	5/22/95	0.29	TIME	OF	RELEASES	16345	9827507 601 254
PINK	CANNERY CREEK	1995	94	CANNERY	CR 222-50	1301030910	5/22/95	5/22/95	0.28	TIME	OF	RELEASES	16785	1E+07 597 34
PINK	CANNERY CREEK	1995	94	CANNERY	CR 222-50	1301030911	5/27/95	5/27/95	0.31	TIME	OF	RELEASES	16480	9884051 598 546
PINK	CANNERY CREEK	1995	94	CANNERY	CR 222-50	1301030912	5/27/95	5/27/95	0.27	TIME	OF	RELEASES	16394	9831138 599 679
PINK	CANNERY CREEK	1995	94	CANNERY	CR 222-50	1301030913	5/30/95	5/30/95	0.27	TIME	OF	RELEASES	16668	1E+07 606 013
PINK	CANNERY CREEK	1995	94	CANNERY	CR 222-50	1301030914	5/30/95	5/30/95	0.27	TIME	OF	RELEASES	16247	9765141 601 042
PINK	CANNERY CREEK	1995	94	CANNERY	CR 222-50	1301030915	6/1/95	6/1/95	0.27	TIME	OF	RELEASES	16094	9610718 597 161
PINK	CANNERY CREEK	1995	94	CANNERY	CR 222-50	1301031001	6/1/95	6/1/95	0.24	TIME	OF	RELEASES	4176	2537200 607 567
PINK	SOLOMON GULCH	1995	94	SOLOMON	GULCH 221	1301030602	5/2/95	5/2/95	0.35				38238	2.4E+07 629 335
PINK	SOLOMON GULCH	1995	94	SOLOMON	GULCH 221	1301030603	5/2/95	5/2/95	0.34				41773	2.5E+07 607 101
PINK	SOLOMON GULCH	1995	94	SOLOMON	GULCH 221	1301030604	5/2/95	5/2/95	0.36				42204	2.6E+07 614 581
PINK	SOLOMON GULCH	1995	94	SOLOMON	GULCH 221	1301030605	5/5/95	5/5/95	0.31				44606	2.7E+07 605 278
PINK	SOLOMON GULCH	1995	94	SOLOMON	GULCH 221	1301030606	5/5/95	5/5/95	0.33				45160	2.7E+07 601 16
PINK	SOLOMON GULCH	1995	94	SOLOMON	GULCH 221	1301030607	5/5/95	5/5/95	0.29				40824	2.4E+07 596 06
PINK	SOLOMON GULCH	1995	94	SOLOMON	GULCH 221	1301030608	5/2/95	5/2/95	0.37				52218	3.2E+07 611 228
PINK	SOLOMON GULCH	1995	94	SOLOMON	GULCH 221	1301030609	5/5/95	5/5/95	0.32				32811	2E+07 597 67
PINK	WALLY NOERENBERG	1995	94	LAKE BA	Y 223-40	1301030412	4/29/95	4/29/95	0.35	TIME	OF	RELEASES	18306	1.1E+07 612 067
PINK	WALLY NOERENBERG	1995	94	LAKE BA	Y 223-40	1301030413	4/29/95	4/29/95	0.31	TIME	OF	RELEASES	19685	1.2E+07 598 646
PINK	WALLY NOERENBERG	1995	93	LAKE BA	Y 223-40	1301030414	5/1/95	5/1/95	0.27	TIME	OF	RELEASES	19554	1.2E+07 605 258
PINK	WALLY NOERENBERG	1995	94	LAKE BA	Y 223-40	1301030415	5/1/95	5/1/95	0.28	TIME	OF	RELEASES	19626	1.2E+07 604 205
PINK	WALLY NOERENBERG	1995	94	LAKE BA	Y 223-40	1301030501	5/3/95	5/3/95	0.28	TIME	OF	RELEASES	19655	1.2E+07 608 753
PINK	WALLY NOERENBERG	1995	94	LAKE BA	Y 223-40	1301030502	5/3/95	5/3/95	0.25	TIME	OF	RELEASES	19615	1.2E+07 607 219
PINK	WALLY NOERENBERG	1995	94	LAKE BA	Y 223-40	1301030503	5/5/95	5/5/95	0.22	TIME	OF	RELEASES	21607	1.3E+07 598 84
PINK	WALLY NOERENBERG	1995	94	LAKE BA	Y 223-40	1301030504	5/5/95	5/5/95	0.26	TIME	OF	RELEASES	20170	1.2E+07 597 197
PINK	WALLY NOERENBERG	1995	94	LAKE BA	Y 223-40	1301030505	5/7/95	5/7/95	0.25	TIME	OF	RELEASES	20192	1.2E+07 597 023
PINK	WALLY NOERENBERG	1995	94	LAKE BA	Y 223-40	1301030506	5/7/95	5/7/95	0.24	TIME	OF	RELEASES	20258	1.2E+07 597 032
PINK	WALLY NOERENBERG	1995	94	LAKE BA	Y 223-40	1301030507	5/13/95	5/13/95	0.26	TIME	OF	RELEASES	19983	1.2E+07 602 143
PINK	WALLY NOERENBERG	1995	94	LAKE BA	Y 223-40	1301030508	5/13/95	5/13/95	0.26	TIME	OF	RELEASES	20160	1.2E+07 597 31
PINK	WALLY NOERENBERG	1995	94	LAKE BA	Y 223-40	1301030509	5/22/95	5/22/95	0.27	TIME	OF	RELEASES	20152	1.2E+07 598 366
PINK	WALLY NOERENBERG	1995	94	LAKE BA	Y 223-40	1301030510	5/22/95	5/22/95	0.24	TIME	OF	RELEASES	11518	6723354 583 725
PINK	WALLY NOERENBERG	1995	94	LAKE BA	Y 223-40	1301030511	6/15/95	6/15/95	1.06	SIZE	OF	RELEASES	5443	3153255 579 322
PINK	WALLY NOERENBERG	1995	94	LAKE BA	Y 223-40	1301030512	6/15/95	6/15/95	0.95	SIZE	OF	RELEASES	5346	3162934 591 644

TABLE 3
1995 NON-PINK RELEASES BY TAG CODE

SPEC\$	HAT\$	RELYR	BDYR	RELSITE	STOCK	TAGC	BEGREL	ENDREL	RELWEIT	EXPERMNT	TAGGED	RELEASE	TAGXDIS
SOCKEYE	(M) GULKANA	1995	93	SUMMIT LK 212-20	GULKANA	312458	6/1/95	6/6/95	5.62		10,084	42,317	4.196
SOCKEYE	(M) GULKANA	1995	93	SUMMIT LK 212-20	GULKANA	312459	6/14/95	6/23/95	6.3		10,365	175,242	16.907
SOCKEYE	(M) GULKANA	1995	93	SUMMIT LK 212-20	GULKANA	312460	6/6/95	6/15/95	5.39		10,204	115,407	11.309
SOCKEYE	(M) GULKANA	1995	93	SUMMIT LK 212-20	GULKANA	312461	6/24/95	7/1/95	7.75		10,120	132,335	13.076
SOCKEYE	GULKANA	1995	93	CROSSWIND LK 212-20	GULKANA	312451	5/30/95	6/2/95	8.42	COLONIZATION	10,495	141,751	13.506
SOCKEYE	GULKANA	1995	93	CROSSWIND LK 212-20	GULKANA	312452	6/1/95	6/4/95	8.32	COLONIZATION	10,591	160,417	15.146
SOCKEYE	GULKANA	1995	93	CROSSWIND LK 212-20	GULKANA	312453	6/3/95	6/5/95	8.32	COLONIZATION	10,496	159,155	15.163
SOCKEYE	GULKANA	1995	93	CROSSWIND LK 212-20	GULKANA	312454	6/4/95	6/10/95	8.31	COLONIZATION	10,535	330,377	31.359
SOCKEYE	GULKANA	1995	93	CROSSWIND LK 212-20	GULKANA	312455	6/10/95	6/14/95	8.33	COLONIZATION	10,713	194,139	18.121
SOCKEYE	GULKANA	1995	93	CROSSWIND LK 212-20	GULKANA	312456	6/13/95	6/23/95	10.12	COLONIZATION	10,603	82,560	7.786
SOCKEYE	MAIN BAY	1995	93	MAIN BAY 225-20	MAIN BAY	312436	5/13/95	5/13/95	4.87	REARING STRATE	19,071	754,061	39.539
SOCKEYE	MAIN BAY	1995	93	MAIN BAY 225-20	MAIN BAY	312437	5/30/95	5/31/95	10.14	REARING STRATE	21,137	850,086	40.217
SOCKEYE	MAIN BAY	1995	93	MAIN BAY 225-20	ESHAMY LK	312440	6/1/95	6/1/95	8.84	REARING STRATE	19,219	776,436	40.399
SOCKEYE	MAIN BAY	1995	93	MAIN BAY 225-20	MAIN BAY	312441	6/1/95	6/1/95	6.48	REARING STRATE	19,371	769,575	39.728
SOCKEYE	MAIN BAY	1995	93	MAIN BAY 225-20	MAIN BAY	312442	5/30/95	6/2/95	11.62	REARING STRATE	32,462	1,276,154	39.312
SOCKEYE	MAIN BAY	1995	93	MAIN BAY 225-20	MAIN BAY	312443	5/13/95	5/13/95	5.51	REARING STRATE	21,223	839,268	39.545
SOCKEYE	MAIN BAY	1995	94	MAIN BAY 225-20	MAIN BAY	312444	6/1/95	6/1/95	4.97	REARING STRATE	4,265	82,514	19.346
CHUM	SOLOMON GULC	1995	94	SOLOMON GULCH 221-	SOLOMON GULCH 22	1301030610	5/2/95	5/2/95	0.45		3,057	1,393,586	455.867
COHO	SOLOMON GULC	1995	93	SOLOMON GULCH 221-	SOLOMON GULCH 22	312447	6/16/95	6/16/95			32,782	1,305,316	39.818
CHUM	WALLY NOEREN	1995	94	LAKE BAY 223-40	WALLY NOERENBER	1301030312	5/6/95	5/6/95	1.02	TIME OF RELEASE	8,037	4,123,734	513.093
CHUM	WALLY NOEREN	1995	94	LAKE BAY 223-40	WALLY NOERENBER	1301030313	4/30/95	4/30/95	1.02	TIME OF RELEASE	12,116	5,973,455	493.022
CHUM	WALLY NOEREN	1995	94	LAKE BAY 223-40	WALLY NOERENBER	1301030314	4/30/95	4/30/95	0.79	TIME OF RELEASE	11,908	5,969,790	501.325
CHUM	WALLY NOEREN	1995	94	LAKE BAY 223-40	WALLY NOERENBER	1301030315	5/3/95	5/3/95	0.71	TIME OF RELEASE	12,091	6,005,039	496.653
CHUM	WALLY NOEREN	1995	94	LAKE BAY 223-40	WALLY NOERENBER	1301030401	5/3/95	5/3/95	0.76	TIME OF RELEASE	11,930	5,948,623	498.627
CHUM	WALLY NOEREN	1995	94	LAKE BAY 223-40	WALLY NOERENBER	1301030402	5/18/95	5/18/95	0.83	TIME OF RELEASE	11,623	5,828,160	501.433
CHUM	WALLY NOEREN	1995	94	LAKE BAY 223-40	WALLY NOERENBER	1301030403	5/31/95	5/31/95	1.2	TIME OF RELEASE	11,481	5,771,017	502.658
CHUM	WALLY NOEREN	1995	94	LAKE BAY 223-40	WALLY NOERENBER	1301030404	5/23/95	5/23/95	0.82	TIME OF RELEASE	11,649	5,911,243	507.446
CHUM	WALLY NOEREN	1995	94	LAKE BAY 223-40	WALLY NOERENBER	1301030405	6/1/95	6/1/95	0.92	TIME OF RELEASE	11,238	5,641,060	501.962
CHUM	WALLY NOEREN	1995	94	LAKE BAY 223-40	WALLY NOERENBER	1301030406	5/31/95	5/31/95	0.95	TIME OF RELEASE	11,694	5,743,449	491.144
CHUM	WALLY NOEREN	1995	94	LAKE BAY 223-40	WALLY NOERENBER	1301030411	5/31/95	5/31/95	0.52	TIME OF RELEASE	3,661	1,814,753	495.698
CHUM	WALLY NOEREN	1995	94	LAKE BAY 223-40	WALLY NOERENBER	1301030514	5/23/95	5/23/95	1.05	TIME OF RELEASE	7,960	3,919,248	492.367
CHUM	WALLY NOEREN	1995	94	LAKE BAY 223-40	WALLY NOERENBER	1301030515	6/1/95	6/1/95	1.1	TIME OF RELEASE	7,734	3,839,025	496.382
CHUM	WALLY NOEREN	1995	94	PORT CHALMERS 227-2	WALLY NOERENBER	1301030601	5/24/95	5/24/95	0.57	TIME OF RELEASE	11,792	5,766,343	489.004
CHUM	WALLY NOEREN	1995	94	PORT CHALMERS 227-2	WALLY NOERENBER	1301030407	5/4/95	5/4/95	0.55	TIME OF RELEASE	11,814	6,073,482	514.091
CHUM	WALLY NOEREN	1995	94	PORT CHALMERS 227-2	WALLY NOERENBER	1301030408	5/4/95	5/4/95	0.54	REARING STRATE	11,865	6,026,052	507.884
CHUM	WALLY NOEREN	1995	94	PORT CHALMERS 227-2	WALLY NOERENBER	1301030409	5/24/95	5/24/95	0.81	TIME OF RELEASE	11,808	5,948,343	503.755
CHUM	WALLY NOEREN	1995	94	PORT CHALMERS 227-2	WALLY NOERENBER	1301030410	5/24/95	5/24/95	0.75	TIME OF RELEASE	12,234	6,163,188	503.775
COHO	WALLY NOEREN	1995	93	LAKE BAY 223-40	WALLY NOERENBER	312438	6/13/95	6/13/95	16.8	REARING STRATE	10,585	208,131	19.662
COHO	WALLY NOEREN	1995	93	LAKE BAY 223-40	WALLY NOERENBER	312439	6/4/95	6/4/95	11.95	REARING STRATE	10,123	204,495	20.201
□													

TABLE 4
1995 ADULT SURVIVAL RATE BY TAG CODE

Survival Estimates and Release information for 1995 pink returns estimated with 1.77 adjustment factor										
Hatchery	Tagcode	Survival Est %	Stand err	Rel weigh	Experiment			#tags	Contribution	%of catch
A F KOERNIG	1301030108	0.05	0.036406	0.27	TIME	OF	RELEASE	2	3282.65625	0.02
A F KOERNIG	1301030109	0.02	0	0.26	TIME	OF	RELEASE	1	1061.9823	0.01
A F KOERNIG	1301030110	0.02	0	0.26	TIME	OF	RELEASE	1	1061.94336	0.01
A F KOERNIG	1301030113	0.10	0.038343	0.23	TIME	OF	RELEASE	2	5285.31299	0.03
A F KOERNIG	1301030114	0.23	0.095736	0.22	TIME	OF	RELEASE	3	14150.8867	0.08
A F KOERNIG	1301030115	0.23	0.082136	0.21	TIME	OF	RELEASE	5	11632.9111	0.07
A F KOERNIG	1301030201	0.20	0.11882	0.21	TIME	OF	RELEASE	4	9787.80859	0.06
A F KOERNIG	1301030202	0.16	0.05695	0.22	TIME	OF	RELEASE	5	10342.7061	0.06
A F KOERNIG	1301030203	0.15	0.065212	0.23	TIME	OF	RELEASE	3	9509.33203	0.06
A F KOERNIG	1301030204	0.65	0.205886	0.23	TIME	OF	RELEASE	12	43461.4531	0.25
A F KOERNIG	1301030205	0.75	0.15818	0.22	TIME	OF	RELEASE	18	46863.6758	0.27
A F KOERNIG	1301030206	0.64	0.200624	0.24	TIME	OF	RELEASE	13	43984.7109	0.26
A F KOERNIG	1301030207	1.30	0.251904	0.22	TIME	OF	RELEASE	31	83415.9375	0.49
A F KOERNIG	1301030303	7.46	1.119573	1.09	SIZE	OF	RELEASE	264	264723.125	1.54
A F KOERNIG	1301030304	6.29	0.893904	1.03	SIZE	OF	RELEASE	241	219971.609	1.28
CANNERY CREEK	1301021513	0.36	0.119929	0.29	TIME	OF	RELEASE	10	34533.6367	0.20
CANNERY CREEK	1301021514	0.43	0.139545	0.24	TIME	OF	RELEASE	9	39686.2383	0.23
CANNERY CREEK	1301021515	1.46	0.273948	0.25	TIME	OF	RELEASE	34	138971.578	0.81
CANNERY CREEK	1301030101	5.99	0.525123	0.26	TIME	OF	RELEASE	135	565202.438	3.29
CANNERY CREEK	1301030102	4.89	0.482306	0.25	TIME	OF	RELEASE	107	463911.438	2.70
CANNERY CREEK	1301030103	4.61	0.460585	0.25	TIME	OF	RELEASE	111	449890.781	2.62
CANNERY CREEK	1301030104	3.60	0.402492	0.3	TIME	OF	RELEASE	94	355758.344	2.07
CANNERY CREEK	1301030105	6.48	0.548845	0.26	TIME	OF	RELEASE	139	620943.875	3.61
CANNERY CREEK	1301030106	6.17	0.551855	0.24	TIME	OF	RELEASE	120	503131.125	2.93
SOLOMON GULCH	1301030209	1.67	0.303499	0.44	-0-			201	471266.188	2.74
SOLOMON GULCH	1301030210	1.31	0.223177	0.41	-0-			154	384563.969	2.24
SOLOMON GULCH	1301030211	2.02	0.269197	0.45	-0-			248	487529.656	2.84
SOLOMON GULCH	1301030212	8.60	1.023131	0.65	-0-			1105	2041669.63	11.89
SOLOMON GULCH	1301030213	8.17	0.899825	64	TIME	OF	RELEASE	1354	2413582.75	14.05
SOLOMON GULCH	1301030214	7.40	0.735555	0.62	TIME	OF	RELEASE	618	1072574.63	6.24
WALLY NOERENBERG	1301020401	0.53	0.099969	0.35	TIME	OF	RELEASE	13	50058.5938	0.29
WALLY NOERENBERG	1301021214	0.79	0.183494	0.23	TIME	OF	RELEASE	1	10312.292	0.06

TABLE 4
1995 ADULT SURVIVAL RATE BY TAG CODE

WALLY NOERENBERG	1301021312	1.11	0.153949	0.38	TIME	OF	RELEASE	31	124802.766	0.73
WALLY NOERENBERG	1301021313	0.91	0.137294	0.41	TIME	OF	RELEASE	27	104589.945	0.61
WALLY NOERENBERG	1301021314	0.29	0.068438	0.39	TIME	OF	RELEASE	15	35508.3984	0.21
WALLY NOERENBERG	1301021315	0.32	0.084269	0.39	TIME	OF	RELEASE	13	38480.2383	0.22
WALLY NOERENBERG	1301021401	0.16	0.0875	0.41	TIME	OF	RELEASE	5	19095.8262	0.11
WALLY NOERENBERG	1301021402	2.00	0.133013	-0-	-0-			126	399.209869	0.00
WALLY NOERENBERG	1301021403	0.21	0.073913	0.39	TIME	OF	RELEASE	6	24921.2168	0.15
WALLY NOERENBERG	1301021404	0.18	0.043744	0.4	TIME	OF	RELEASE	5	22115.125	0.13
WALLY NOERENBERG	1301021405	0.09	0.046921	0.4	TIME	OF	RELEASE	4	11418.7002	0.07
WALLY NOERENBERG	1301021406	0.07	0.039793	0.38	TIME	OF	RELEASE	3	7971.12012	0.05
WALLY NOERENBERG	1301021407	0.32	0.078754	0.38	TIME	OF	RELEASE	11	38541.25	0.22
WALLY NOERENBERG	1301021408	0.50	0.10529	0.35	TIME	OF	RELEASE	14	61114.0117	0.36
WALLY NOERENBERG	1301021409	0.33	0.069442	0.36	TIME	OF	RELEASE	8	39955.5547	0.23
WALLY NOERENBERG	1301030305	23.53	1.343817	1.46	SIZE	OF	RELEASE	724	895135.563	5.21
WALLY NOERENBERG	1301030306	21.15	1.247775	1.38	SIZE	OF	RELEASE	674	826131.25	4.81
□										
Contribution numbers are not adjusted for Cannery Creek Hatchery high tag loss rate and can not be used other than for percentage purposes.										
Cannery Creek survivals are subject to bias because of the high tag loss rate. It is unknown whether tag loss was consistant throughout all tag codes										
or if some codes experienced higher loss rates than others.										

Table 5

COMMON PROPERTY HARVESTS FOR 1995

Eastern District

Date	Period	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
		Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
07/02	1	0		0		0		788569	9.7E+09	788569	9.7E+09	7701	796270	279
07/05	2	0		0		0		644113	4.8E+09	644113	4.8E+09	0	644113	316
07/08	3	0		0		0		607701	4.7E+09	607701	4.7E+09	0	607701	289
07/10	4	0		0		0		452586	2.5E+09	452586	2.5E+09	3919	456505	246
07/12	5	0		0		0		346729	2.1E+09	346729	2.1E+09	1298	348027	200
7/14-7/16	6	0		0		1630	9295471	601120	3.0E+09	602750	3.0E+09	0	602750	325
7/17-7/19	7	0		0		0		308044	1.1E+09	308044	1.1E+09	1178	309222	211
07/27	8	0		0		0		0		0	0	96105	96105	0
08/15	9	0		0		6706	44971153	0		6706	44971153	73660	80366	1
08/17	10	0		0		15353	1.7E+08	14246	94724941	29599	2.6E+08	113924	143523	5
08/19	11	0		909	826213	14767	1.1E+08	0		15676	1.1E+08	55989	71665	3
08/21	12	0		1640	2691118	14767	72690026	0		16407	75381144	39147	55554	4
08/23	13	0		7668	58798201	7670	58832731	0		15338	1.2E+08	7158	22496	2
8/25-8/27 *	14	0		351	123022	351	123095	0		702	246117	327	1029	0
9/03-9/06 *	17-18	0		106	11310	106	11317	0		212	22627	100	312	0
Subtotal		0	0	10674	62449864	61350	4.6E+08	3763108	2.8E+10	3835132	2.9E+10	400506	4235638	1881

* Proportions from period 13 were used to partition the catch.

Northern District 1/

Date	Period	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
		Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
08/09	1	5914	23499866	31128	1.7E+08	855676	3.4E+08	0		892718	5.4E+08	192305	1085023	233
08/11	2	359	436588	1785	4713060	179230	7.0E+08	0		181374	7.1E+08	33677	215051	50
08/13	3	0		9664	78933082	339557	1.0E+09	0		349221	1.1E+09	101930	451151	84
08/15	4	0		31445	1.5E+08	549173	2.4E+09	2959	10678424	583577	2.6E+09	97289	680866	120
08/17	5	0		19999	1.3E+08	294044	3.0E+09	0		314043	3.2E+09	954	314997	53
08/19	6	0		20202	78445237	419565	2.2E+09	0		439767	2.3E+09	103638	543405	86
08/21	7	0		6541	21316168	73135	4.3E+08	0		79676	4.6E+08	76283	155959	15
08/23	8	0		20137	93951597	23956	2.4E+08	0		44093	3.3E+08	46965	91058	12
8/25 - 8/27	9	0		926	2565865	73314	1.6E+08	0		74240	1.6E+08	9917	84157	34
8/28-8/30	10	0		379	429964	30011	26070712	0		30390	26500676	4061	34451	
Subtotal		6273	23936454	142206	7.4E+08	2837661	1.1E+10	2959	10678424	2989099	1.1E+10	667019	3656118	687

1/ Clips without tags were included in hatchery contribution calculations

Proportions from period 9 were used to partition the catch.

Coghill District

Date	Period	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
		Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
6/15-6/16 *	1 GN	0		0		0		0		0	0	1	1	0
6/19-6/20 *	2 GN	0		0		0		0		0	0	3	3	0
06/23 *	3 GN	0		0		0		0		0	0	24	24	0
6/29-6/30 *	4 GN	0		0		0		0		0	0	11	11	0
7/03-7/04 *	5 GN	0		0		0		0		0	0	1	1	0
7/06-7/07 *	6 GN	0		0		0		0		0	0	59	59	0
07/10 *	7 GN	0		0		0		0		0	0	26	26	0
7/13-7/14 *	8 GN	0		0		0		0		0	0	77	77	0
07/17 *	9 GN	0		0		0		0		0	0	304	304	0
07/31	10 GN/ 1 PS	0		0		0		0		0	0	2516	2516	0
8/04-8/05	11 GN/ 2 PS	0		0		0		0		0	0	3101	3101	0
8/07-8/08	12 GN/ 3 PS	0		0		0		0		0	0	597	597	0
08/09	4 PS	0		121334	3.7E+08	23540	1.3E+08	0		144874	5.0E+08	27806	172680	100
8/10-8/12	6 PS	1480	2189624	88572	3.0E+08	43207	4.3E+08	0		133259	7.3E+08	19426	152685	83
08/13	7 PS	0		168484	1.2E+08	63751	1.4E+09	0		232235	1.5E+09	24998	257233	145
08/15	9 PS	0		98268	2.0E+08	23920	1.2E+08	0		122188	3.2E+08	11417	133605	74
08/17	10 PS	834	1081192	60444	1.4E+08	43245	2.4E+08	0		104523	3.8E+08	13990	118513	64
08/19	11 PS	0		32598	87982111	29333	1.6E+08	0		61931	2.5E+08	12626	74557	26
08/21	12 PS	0		10079	16448540	7556	24668331	0		17635	41116871	0	17635	13
08/23	13 PS	0		20705	64316312	55639		0		76344	64316312	7847	84191	7
8/28-8/30	14 PS	1292	1669833	52982	1.3E+08	54274		0		108548	1.3E+08	13050	121598	32
8/03-9/02	15 PS	0		35712	1.5E+08	4660	25643895	0		40372	1.8E+08	0	40372	15
9/03-9/15 #	16 PS-18 PS	0		7496	6641154	978	1129797	0		8474	7770951	0	8474	0
Subtotal		3606	4940649	696674	1.6E+09	350103	2.5E+09	0	0	1050383	4.1E+09	137880	1188263	559

* Proportions from period 10 Gillnet/ Period 1 Purse Seine were used to partition the catch.

Proportions from period Period 15 Purse Seine were used to partition the catch.

Eshamy District

Date	Period	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
		Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
7/03-7/04	1	0		0		0		0		0	0	81	81	0
7/06-7/07	2	0		0		0		0		0	0	190	190	0
7/10-7/11	3	0		0		0		0		0	0	394	394	0
7/13-7/15	4	0		0		0		0		0	0	1262	1262	0
7/17-7/21	5	0		0		0		0		0	0	4553	4553	0
7/24-7/26	6	0		0		0		0		0	0	2515	2515	0
8/07-8/08	7	0		0		0		0		0	0	27091	39057	5
8/11	8	611	373315	7416	14775881	4550	28487893	0		11966	43263774	23462	40778	9
Subtotal		611	373315	22285	65836778	6386	31858010	0		29282	98068103	59548	88830	14

Southwestern District

Date	Period	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
		Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
08/04	1	65995	19861594	111521	3.2E+08	402953	1.4E+09	7500	53711400	587969	1.8E+09	290710	878679	194
08/06	2	95723	3.5E+08	149745	3.9E+08	193791	6.3E+08	18742	1.0E+08	458001	1.5E+09	202596	660597	167
08/11	3	36723	72939499	30061	71379605	55819	82556100			122603	2.3E+08	45865	168468	64
Subtotal		198441	4.4E+08	291327	7.9E+08	652563	2.1E+09	26242	1.6E+08	1168573	3.5E+09	539171	1707744	425

Montague District

Date	Period	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
		Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
8/25-8/27	1	0		0		0		0		0	0	12292	12292	0
8/28-8/30	2	0		0		0		0		0	0	5947	5947	0
Subtotal		0	0	0	0	0	0	0	0	0	0	18239	18239	0

Southeastern District

Date	Period	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
		Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
08/15	1	0		0		0		0		0	0	5283	5283	0
08/17	2	0		0		0		0		0	0	6135	6135	0
Subtotal		0	0	0	0	0	0	0	0	0	0	11418	11418	0

Unakwik District

Date	Period	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
		Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
6/29-6/30	4	0		0		0		0		0	0	1	1	0
Subtotal		0	0	0	0	0	0	0	0	0	0	1	1	0
Grand Total		208931	4.7E+08	1163166	3.2E+09	3908063	1.6E+10	3792309	2.8E+10	9072469	4.8E+10	1833782	10906251	3566

Table 6

COST RECOVERY HARVESTS

Eastern District

Date	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
06/23	0		0		0		1588	3164367	1588	3164367	0	1588	3
06/24	0		0		0		5981	59930641	5981	59930641	0	5981	3
06/25	0		0		0		20749	48612754	20749	48612754	6226	26975	9
06/26	0		0		0		52192	93640820	52192	93640820	0	52192	32
06/27	0		0		0		72821	3.8E+08	72821	3.8E+08	0	72821	40
06/28	0		0		0		128369	2.8E+08	128369	2.8E+08	0	128369	87
06/29	0		0		0		222962	8.3E+08	222962	8.3E+08	0	222962	28
06/30	0		0		0		190518	9.0E+08	190518	9.0E+08	0	190518	95
07/01	0		0		0		184986	7.5E+08	184986	7.5E+08	0	184986	116
07/03	0		0		0		213639	7.4E+08	213639	7.4E+08	0	213639	88
07/04	0		0		0		219369	7.1E+08	219369	7.1E+08	0	219369	99
07/06	0		0		0		299280	1.3E+09	299280	1.3E+09	0	299280	196
07/07	0		0		0		321901	1.1E+08	321901	1.1E+08	0	321901	135
07/09	0		0		0		259193	8.2E+08	259193	8.2E+08	0	259193	105
07/11	0		0		0		235666	6.8E+09	235666	6.8E+09	0	235666	107
07/17	0		0		0		99445	4.4E+08	99445	4.4E+08	0	99445	39
Subtotal	0	0	0	0	0	0	2528659		2528659	1.4E+10	6226	2534885	1182

Northern District 1/

Date	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
08/02	0		0		12573	5634626	0		12573	5634626	825	13398	7
08/04	0		0		5211	651106	0		5211	651106	1021	6232	5
08/05	0		0		29477	12872513	0		29477	12872513	12660	42137	16
08/07	0		0		347405	9.3E+08	0		347405	9.3E+08	35529	382934	61
08/08	0		0		219704	1.3E+09	0		219704	1.3E+09	33079	252783	33
08/10	0		0		33189	44080819	0		33189	44080819	3231	36420	17
08/11	0		0		19726	8864852	0		19726	8864852	7919	27645	12
08/12	0		0		10252	13951218	0		10252	13951218	7720	17972	5
08/13	0		0		7563	8239243	0		7563	8239243	6235	13798	4
08/15	0		0		6283	1577196	0		6283	1577196	4983	11266	3
08/17	0		0		6631	2635691	0		6631	2635691	8419	15050	2
08/19	0		0		34539	39191424	0		34539	39191424	0	34539	28
08/20	0		0		47092	64986721	0		47092	64986721	27602	74694	17
08/22	0		0		25844	24185556	0		25844	24185556	13580	39424	7
8/23 - 8/25	0		0		54279	1.7E+08	0		54279	1.7E+08	14040	68319	9
Subtotal	0	0	0	0	859768	2.7E+09	0		859768	2.7E+09	176843	1036611	226

1/ Clips without tags were included in hatchery contribution calculations

COST RECOVERY HARVESTS (cntnd.)

Coghill District

Date	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
7/18 - 8/05	0		139617	2.7E+09	0		0		139617	2.7E+09	0	139617	21
8/06 - 8/12	0		160480	2.4E+09	0		0		160480	2.4E+09	14457	174937	15
8/13 - 8/15	0		191454	1.5E+09	0		0		191454	1.5E+09	50749	242203	34
8/16 - 8/17	0		137083	5.3E+08	4730	32460643	0		141813	5.6E+08	0	141813	74
8/18 - 8/19	0		46954	71277317	0		0		46954	71277317	19995	66949	41
08/20	0		20283	27179472	0		0		20283	27179472	4406	24689	21
8/21 - 8/23	0		37541	1.0E+08	4907	27108156	0		42448	1.3E+08	0	42448	21
8/26 - 9/04	0		87061	2.7E+08	0		0		87061	2.7E+08	9221	96282	36
Subtotal	0	0	820473	7.6E+09	9637	59568799	0	0	830110	7.6E+09	98828	928938	263

Southwestern District

Date	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
07/26	708	250752	0		0		0		708	250752	2063	2771	2
7/30 - 8/03	16901	45697897	0		0		0		16901	45697897	35175	52076	8
8/04 - 8/07	87943	7.9E+08	0		0		0		87943	7.9E+08	6120	94063	12
8/08 - 8/10	68741	7.6E+08	0		8151	5.1E+08	0		76892	1.3E+09	0	76892	9
8/11 - 8/14	65721	7.4E+08	0		0		0		65721	7.4E+08	0	65721	18
08/16	18517	57143677	0		0		0		18517	57143677	11737	30254	6
08/17	37908	84596581	0		0		0		37908	84596581	16466	54374	20
08/18	38896	1.9E+08	3078	25479109	0		0		41974	2.2E+08	0	41974	29
08/19	18316	20205323	469	290008	0		0		18785	20495331	0	18785	30
08/20	38088	66482215	0		0		0		38088	66482215	1948	40036	29
8/22 - 8/23	40156	3.2E+08	0		0		0		40156	3.2E+08	0	40156	10
08/25	16085	32339848	0		0		0		16085	32339848	17150	33235	8
8/26 - 8/28	20371	56664476	0		4871	23346918	0		25242	80011394	0	25242	21
Subtotal	468351	3.2E+09	3547	25769117	13022	5.3E+08	0	0	484920	3.7E+09	90659	575579	202
Grand Total	468351	3.2E+09	824020	7.6E+09	882427	3.3E+09	2528659	0	4703457	2.8E+10	372556	5076013	1873

Table 7

TEST FISHERY

Southwestern District Test Fishery

Date	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
7/25-7/26	0		0		4555	2321554	3375	11392836	7930	13714390	73	8003	2
7/27-7/28	0		0		7746	3356785	0		7746	3356785	8111	15857	2
07/29	410	500775	2876	9520889	12303	9055142	880	2304113	16469	21380919	0	16469	16
07/30	714	511253	4	13	23541	17944000	0		24259	18455266	0	24259	13
7/31-8/01	0		2168	4700368	6481	4700368	0		8649	9400736	40931	49580	2
08/02	1439	2071085	2883	4157136	8645	37369433	0		12967	43597654	20760	33727	5
Subtotal	2563	3083113	7931	18378406	63271	74747282	4255	13696949	78020	1.1E+08	69875	147895	40

Combined Totals for All Fisheries and Rack Return

Grand Total	806452	3.7E+09	2261063	1.1E+10	5049605	1.9E+10	6712043	2.9E+10	14829163	7.7E+10	2410027	17239190	7355
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Table 8

RACK RETURN

Solomon Gulch Hatchery

Date	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
07/25	0		0		0		1916	2445718	1916	2445718	0	1916	3
07/26	0		0		0		3308	2776477	3308	2776477	5416	8724	4
07/27	0		0		0		9340	9197403	9340	9197403	0	9340	14
07/28	0		0		0		13647	13409316	13647	13409316	0	13647	18
07/29	0		0		0		6274	4927107	6274	4927107	3180	9454	8
07/31	0		0		0		15118	16541125	15118	16541125	0	15118	24
08/01	0		0		0		15941	17369152	15941	17369152	0	15941	26
08/02	0		0		0		16277	15613622	16277	15613622	0	16277	24
08/03	0		0		0		13333	12810910	13333	12810910	0	13333	20
08/04	0		0		0		13333	17099112	13333	17099112	0	13333	25
08/05	0		0		0		15002	11925111	15002	11925111	589	15591	19
08/07	0		0		0		22009	26029244	22009	26029244	0	22009	39
08/08	0		0		0		15679	15226851	15679	15226851	0	15679	23
08/09	0		0		0		17802	15656434	17802	15656434	0	17802	25
08/10	0		0		0		20504	18403808	20504	18403808	0	20504	28
08/11	0		0		0		15988	13984157	15988	13984157	0	15988	22
08/12	0		0		0		14119	15836653	14119	15836653	0	14119	25
08/14	0		0		0		17420	22080981	17420	22080981	0	17420	35
08/15	0		0		0		16576	18815486	16576	18815486	0	16576	31
08/16	0		0		0		9345	13275055	9345	13275055	0	9345	22
08/18	0		0		0		19946	28671538	19946	28671538	0	19946	46
08/21	0		0		0		10895	8491922	10895	8491922	7179	18074	14
08/22	0		0		0		6980	5420931	6980	5420931	2610	9590	9
08/23	0		0		0		13022	9976837	13022	9976837	1748	14770	17
08/24	0		0		0		13959	11441475	13959	11441475	0	13959	19
08/25	0		0		0		13817	10614634	13817	10614634	2416	16233	18
08/28	0		0		0		6775	14365049	6775	14365049	0	6775	24
08/29	0		0		0		6282	7049819	6282	7049819	0	6282	12
08/30	0		0		0		6864	5235330	6864	5235330	768	7632	9
08/31	0		0		0		9733	13500024	9733	13500024	0	9733	23
09/01	0		0		0		5345	4081174	5345	4081174	1822	7167	7
09/06	0		0		0		271	577078	271	577078	0	271	1
Subtotal	0	0	0	0	0	0	386820	4.0E+08	386820	4.0E+08	25728	412548	634

RACK RETURN (cntnd.)

Cannery Creek Hatchery 1/

Date	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
08/22	0		0		403	1131664	0		403	1131664	0	403	1
08/23	0		0		2123	252151	0		2123	252151	222	2345	2
08/31	0		0		4800	6037774	0		4800	6037774	0	4800	8
09/01	0		0		4873	2893463	0		4873	2893463	0	4873	7
09/02	0		0		6202	4778516	0		6202	4778516	0	6202	6
09/03	0		0		8814	9684404	0		8814	9684404	0	8814	13
09/04	354	125330	0		9554	10141553	0		9908	10266883	2781	12689	10
09/05	0		0		14589	18305041	0		14589	18305041	0	14589	18
09/06	0		0		10638	5907493	0		10638	5907493	0	10638	15
09/07	0		0		10617	2266344	0		10617	2266344	1197	11814	10
09/08	0		0		15616	8047181	0		15616	8047181	0	15616	16
09/09	0		0		8496	3019366	0		8496	3019366	7419	15915	8
09/10	0		0		10624	5282765	0		10624	5282765	5321	15945	10
09/11	0		0		16444	11060874	0		16444	11060874	0	16444	16
09/12	0		0		17016	16348673	0		17016	16348673	0	17016	18
09/13	0		0		14876	8801144	0		14876	8801144	540	15416	14
09/14	0		0		10751	8801144	0		10751	8801144	0	10751	14
09/15	0		0		11693	9426647	0		11693	9426647	5305	16998	11
09/16	0		0		7434	2890611	0		7434	2890611	7014	14448	7
09/17	0		0		6377	4777178	0		6377	4777178	3269	9646	6
Subtotal	354	125330	0	0	191940	1.4E+08	0		192294	1.4E+08	33068	225362	210

1/ Clips without tags were included in hatchery contribution calculations

RACK RETURN (cntnd.)

Wally Noerenberg Hatchery

Date	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
08/22	0		6383	4524316	0		0		6383	4524316	95	6478	12
08/23	0		1419	503500	0		0		1419	503500	1274	2693	4
08/24	0		5143	2766371	0		0		5143	2766371	0	5143	14
08/25	0		3547	2013258	0		0		3547	2013258	1056	4603	8
08/27	0		4609	2387187	0		0		4609	2387187	715	5324	11
08/28	0		7812	5041306	0		0		7812	5041306	178	7990	18
08/29	0		7778	4652606	932	1131421	0		8710	5784027	0	8710	25
08/30	0		6879	4399914	896	1128813	0		7775	5528727	0	7775	20
08/31	0		7815	4300359	0		0		7815	4300359	1062	8877	18
09/01	0		5676	2765016	0		0		5676	2765016	2054	7730	15
09/02	0		6381	2963079	0		0		6381	2963079	5858	12239	30
09/03	354	125422	5330	3362563	0		0		5684	3487985	6349	12033	27
09/04	0		11719	6430030	0		0		11719	6430030	2537	14256	30
09/05	0		15622	7056587	0		0		15622	7056587	3406	19028	45
09/06	0		15257	7666679	0		0		15257	7666679	1923	17180	41
09/07	0		14256	6923355	994	1131421	0		15250	8054776	0	15250	45
09/08	0		17508	12804697	0		0		17508	12804697	0	17508	54
09/09	0		6032	2893252	0		0		6032	2893252	1642	7674	16
09/10	0		13464	6251209	0		0		13464	6251209	1057	14521	35
09/11	0		21702	10872895	0		0		21702	10872895	0	21702	56
09/12	0		19193	9108852	0		0		19193	9108852	4114	23307	55
09/13	0		27320	14204220	0		0		27320	14204220	2645	29965	71
09/14	0		22713	10310331	0		0		22713	10310331	5705	28418	65
09/18	0		11678	6672888	0		0		11678	6672888	0	11678	32
09/19	0		710	251750	0		0		710	251750	2771	3481	2
Subtotal	354	125422	265946	1.4E+08	2822	3391655	0	0	269122	1.4E+08	44441	313563	749

RACK RETURN (cntnd.)

Armin F. Koernig Hatchery

Date	AFK Hatchery		WN Hatchery		CC Hatchery		SG Hatchery		TOTAL HATCHERY		TOTAL WILD	TOTAL CATCH	NUMBER TAGS
	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance	Contribution	Variance			
08/23	724	1360489	0		0		0		724	1360489	0	724	2
08/24	354	125330	0		0		0		354	125330	1049	1403	1
08/25	775	1128336	0		0		0		775	1128336	0	775	9
08/27	2236	1128336	0		0		0		2236	1128336	0	2236	9
08/28	3252	2006939	0		0		0		3252	2006939	1075	4327	7
08/29	4603	2381621	0		0		0		4603	2381621	1658	6261	11
08/30	4957	3258884	0		0		0		4957	3258884	1117	6074	10
08/31	6020	2131618	0		0		0		6020	2131618	2604	8624	17
09/01	9819	5274686	0		1082	1171320	0		10901	6446006	139	11040	24
09/02	7732	6982316	0		0		0		7732	6982316	0	7732	14
09/03	11950	9006454	0		0		0		11950	9006454	0	11950	31
09/04	9559	5640202	0		0		0		9559	5640202	2099	11658	21
09/05	9963	5873197	0		0		0		9963	5873197	2333	12296	22
09/06	13956	9701942	0		0		0		13956	9701942	710	14666	27
09/07	5311	3384617	0		0		0		5311	3384617	6639	11950	11
09/08	10061	7591117	0		0		0		10061	7591117	1889	11950	18
09/09	10770	7090193	0		0		0		10770	7090193	472	11242	22
09/10	5714	4368578	0		0		0		5714	4368578	3276	8990	10
09/11	5664	4261047	0		0		0		5664	4261047	585	6249	10
09/12	2479	844677	0		0		0		2479	844677	4932	7411	7
Subtotal	125899	83540579	0	0	1082	1171320	0	0	126981	84711899	30577	157558	283
Grand Total	126607	83791331	265946	1.4E+08	195844	1.4E+08	386820	4.0E+08	975217	7.7E+08	133814	1109031	1876

TABLE 9
1995 CONTRIBUTION BY HATCHERY

SPEC\$	HARV	CATCH	NSAMP	PERS	HAT\$	NTAGS	CONTRIB	STD2	PERC	STDD
PINK	COMMON PROPERTY	10816517	2484362	22.96823	A F KOERNIG	106	208931	5.26E+08	1.84198	22939.6
PINK	COMMON PROPERTY	10816517	2484362	22.96823	CANNERY CREEK	549	3908063	1.15E+10	24.23074	107089.3
PINK	COMMON PROPERTY	10816517	2484362	22.96823	SOLOMON GULCH	1874	3792309	5.70E+10	35.217	238825.8
PINK	COMMON PROPERTY	10816517	2484362	22.96823	WALLY NOERENBERG	664	1163166	4.49E+09	10.9424	67034.49
PINK	ESCAPEMENT	0	19793		A F KOERNIG	1	354.0177	0		0
PINK	PNP FISH	5090152	1224037	24.04716	A F KOERNIG	220	468351	2.89E+09	8.544436	53752.09
PINK	PNP FISH	5090152	1224037	24.04716	CANNERY CREEK	85	882427	2.42E+09	8.017344	49163.68
PINK	PNP FISH	5090152	1224037	24.04716	SOLOMON GULCH	1170	2528659	9.99E+10	49.8134	316011.9
PINK	PNP FISH	5090152	1224037	24.04716	WALLY NOERENBERG	263	824020	1.90E+09	16.37722	43543.24
PINK	RACK	1122898	1108130	98.68483	A F KOERNIG	275	126607	9.41E+08	11.69698	30674.73
PINK	RACK	1122898	1108130	98.68483	CANNERY CREEK	119	195844	6.00E+08	11.26826	24490.78
PINK	RACK	1122898	1108130	98.68483	SOLOMON GULCH	634	386820	1.79E+10	46.43898	133711.6
PINK	RACK	1122898	1108130	98.68483	WALLY NOERENBERG	745	265946	6.34E+09	25.27695	79608.4
PINK	SPECIAL	147895	42888	28.99895	A F KOERNIG	3	2563	1985736	1.808057	1409.161
PINK	SPECIAL	147895	42888	28.99895	CANNERY CREEK	6	63271	3.60E+07	11.14408	5996.286
PINK	SPECIAL	147895	42888	28.99895	SOLOMON GULCH	2	4255	1.37E+07	3.308599	3700.274
PINK	SPECIAL	147895	42888	28.99895	WALLY NOERENBERG	8	7931	1.62E+07	6.426242	4021.37
Contributions include corrections for Cannery Creek					Hatchery contribution to Cost Recovery		4,703,457			
Hatchery high tag loss rate					Hatchery contribution to common property		9,072,469			
					Hatchery contribution to test fishery		78,020			
					Hatchery contribution to spawning rack		975,217			
AFK contibution total			806,806							
CC contribution total			5,049,605							
SG contribution total			6,712,043							
WNH contribution total			2,261,063							

